

Preliminary Amendment

Page 2 of 4

Applicant(s): Joel D. OXMAN et al.

Serial No.: 10/626,261

Confirmation No.: 9585

Filed: 24 July 2003

For: HARDENABLE THERMALLY RESPONSIVE COMPOSITIONS

Amendments to the Specification

Please insert the following new paragraph at page 1, line 5 (immediately after the title):

This application claims the benefit of U.S. Provisional Application No. 60/443,970, filed 30 January 2003.

Please replace the paragraph beginning at page 10, line 24, with the following amended paragraph.

The chemically polymerizable compositions may include redox cure systems that include a polymerizable component (e.g., an ethylenically unsaturated polymerizable component) and redox agents. The redox agents may include an oxidizing agent and a reducing agent. Suitable polymerizable components, redox agents, optional acid-functional components, and optional fillers that are useful in the present invention are described in Applicants' Assignees' copending Application Serial Nos. 10/121,326 (published as US 2003-0166740 A1) and 10/121,329 (published as US 2003-0195273 A1), both filed April 12, 2002. Alternatively, the redox agents may include a free-radical initiator system containing enzymes as disclosed in Applicants' Assignees' copending Application Serial No. 10/327,202, filed December 20, 2002.

Please replace the paragraph beginning at page 11, line 31, with the following amended paragraph.

It may be desirable to use more than one oxidizing agent or more than one reducing agent. Small quantities of transition metal compounds may also be added to accelerate the rate of redox cure. In some embodiments it may be preferred to include a secondary ionic salt to enhance the stability of the polymerizable composition as described in Applicants' Assignees' copending Application Serial No. 10/121,329 (published as US 2003-0195273 A1), filed April 12, 2002.

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Please replace the paragraph beginning at page 13, line 7, with the following amended paragraph.

Thermally responsive viscosity modifiers include, for example, poly(oxyalkylene) polymers, particularly the polymeric surfactants available under the trade designation PLURONIC from BASF Wyandotte (Wyandotte, MI). Other poly(oxyalkylene) polymers may also be useful as thermally responsive viscosity modifiers. Preferably at least 50%, and more preferably at least 70%, of the oxyalkylene units in the polymer are oxyethylene units. Another class of suitable thermally responsive viscosity modifiers is poly(N-alkyl(meth)acrylamide) polymers including, for example, poly(N-isopropylacrylamide) prepared from the free radical polymerization of N-isopropylacrylamide as disclosed, for example, in Applicants' Assignees' copending Application Serial No. 10/626,341 ————— (Attorney Docket No. 57169US003).

Please replace the paragraph beginning at page 36, line 17, with the following amended paragraph.

Glass ionomer compositions were prepared by separately combining 1 part of Example 15A or Example 15B with 2.5 parts of FAS-1 (an FAS glass prepared as described for FAS V in U.S. Patent Application Serial No. 09/916,399 (published as US 2003-0087986 A1), on a paper mixing pad and then mixing the components until homogenous white pastes (Examples 15C and 15D, respectively) were obtained. Examples 15C and 15D were then irradiated with a dental curing light for 20 seconds at 25°C to afford hardened materials. The resulting cured resin modified glass ionomer compositions (Exmaples 15C(cured) and 15D(cured)) were evaluated for diametral tensile strength (DTS) according to the method described herein. Examples 15C(cured) and 15D(cured) had DTS values of 1340 ± 88 psi (9233 ± 606 Kpa) and 1560 ± 227 psi ($10,748 \pm 1564$ KPa), respectively.